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APPROVED FOR ENTRY

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## ROTATING FLUID MACHINE

### BACKGROUND OF THE INVENTION

#### Field of the Invention

The present invention relates to a vane type rotating fluid machine which converts the pressure energy of a gaseous phase working medium into the rotational energy of a rotor and vice versa.

#### Description of the Related Art

Japanese Patent Laid-Open No. 2000-320543 discloses a rotating fluid machine provided with a vane-piston unit combining vanes and pistons, wherein pistons slidably fitted into cylinders provided in radial directions in a rotor converts the pressure energy of a gaseous phase working medium into the rotational energy of the rotor and vice versa via a power converting device composed of annular grooves and rollers, and vanes slidably supported by the rotor in radial directions converts the pressure energy of the gaseous phase working medium into the rotational energy of the rotor and vice versa.

In this rotating fluid machine, a seal holding groove is formed in the end face of each vane opposite the inner circumferential face of the rotor chamber, and a U-shaped vane seal held by this seal holding groove seals the face of the vane in sliding contact with the rotor chamber.

In the above-described conventional rotating fluid, the vane seal held by the seal holding grooves formed in each of the vanes is pressed outward in the radial directions by a centrifugal force accompanying the rotation of the rotor, and sealing performance is achieved by pressing opposite ends of the vane seal with springs against the inner circumferential face of the rotor chamber and, at the same time, causing pressure introduced from a high pressure vane chamber into the bottom of the seal holding groove to press the vane seal against the inner circumferential face of the rotor chamber.